



TEST REPORT

No. : SP121006282-1

Date : Dec. 19,2012

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SHANGHAI TATSUKIN HVAC EQUIPMENT CO., LTD
NO.600, HAITANG ER ROAD, HEQING TOWN, PUDONG DISTRICT, SHANGHAI

This Report cancels and supersedes the Report No.: SP121006282 dated: Nov.12,2012 issued by SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd.

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : PE INSULATION TUBE FOR AIR CONDITIONING
Sample No. : SP121006282
Product specification : SIZE:7/8", THICKNESS: 25MM +/-1MM, COLOR: GRAY, WHITE AND PINK
Product or Lot No. : SINGLE OR DOUBLE TUBE
Material and Mark : PE
Manufacturer : SHANGHAI TATSUKIN HVAC EQUIPMENT CO., LTD
Test Required : EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests, class B.
Date of Receipt : Oct. 8,2012
Test Period : Oct. 8,2012 to Oct. 31,2012
Test result(s) : For further details, please refer to the following page(s)

***** To be continued*****

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd

Ivy Zhu

Ivy Zhu
Authorized signatory

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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
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I. Test conducted

This test is conducted as per EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN 13823:2010 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 11925-2:2010 Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test.

II. Details of classified product

Color	Gray
Thickness*	24mm

*---Measured by laboratory

Mounting and fixing:

The specimens are attached to the steel panel tube at a distance 25mm from the backing board. There is distance 25mm between each test specimen outside.

III. Test results

Test method	Parameter	Number of tests	Results
EN 13823	FIGRA (W/s)	3	31.6
	$LFS < \text{edge of specimen}$		Yes
	THR _{600s} (MJ)		2.3
	SMOGRA (m ² /s ²)		6.8
	TSP _{600s} (m ²)		10.5
	Flaming particles or droplets		No

Test method	Parameter	Specimen number	Results
EN ISO 11925-2 Exposure = 30 s	$F_s \leq 150 \text{ mm}$	6	Yes
	Ignition of the filter paper		No

***** To be continued*****

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IV. Classification and direct field of application

This classification has been carried out in accordance with **EN 13501-1:2007+A1:2009**.

a) Classification

The product, "PE INSULATION TUBE FOR AIR CONDITIONING", classification is as following,

Fire behaviour		Smoke production		Flaming droplets
BL	—	s	1	d 0

Reaction to fire classification: BL—s1, d0

Remark: The classes with their corresponding fire performance are given in annex A.

b) Field of application

This classification for the submitted sample is valid for the following end use condition:

- With mechanical fixing
- With an air gap

This classification is valid for the following product parameters:

- Characteristics are described in § II b of this test report.

Statement: The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Warning:

This classification report does not represent type approval or certification of the product.

The test laboratory has, therefore, play no part in sampling the product for the test, although it holds appropriate references to the manufacturer's factory production control that is aimed to be relevant to the samples tested and that will provide for their traceability.

***** To be continued*****

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Annex A

Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products

Class	Test method(s)	Classification criteria	Additional classification
A1L	EN ISO 1182 ^a and	$\Delta T \leq 30^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0\text{MJ/kg}^a$ and $PCS \leq 2.0\text{MJ/kg}^{bc}$ and $PCS \leq 1.4\text{MJ/m}^2^d$ and $PCS \leq 2.0\text{MJ/kg}^e$	-
A2L	EN ISO 1182 ^a or	and $\Delta T \leq 50^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f \leq 20\text{ s}$	-
	EN ISO 1716		-
	EN 13823	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
BL	EN 13823 and	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	60s 内 $F_s \leq 150\text{mm}$	
CL	EN 13823 and	$FIGRA \leq 250\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 15\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
DL	EN 13823 and	$FIGRA \leq 750\text{W/s}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
EL	EN ISO 11925-2 ⁱ Exposure = 15s	$F_s \leq 150\text{mm}$ within 20 s	flaming droplets/particles ^h

***** To be continued*****

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FL	No performance determined
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^a For homogeneous products and substantial components of non-homogeneous products.

^b For any external non-substantial component of non-homogeneous products.

^c Alternatively, any external non-substantial component having a PCS $\leq 2,0 \text{ MJ/m}^2$, provided that the product satisfies the following criteria of EN 13823: FIGRA $\leq 20 \text{ W/s}$, and LFS < edge of specimen, and THR_{600s} $\leq 4,0 \text{ MJ}$, and s1, and d0.

^d For any internal non-substantial component of non-homogeneous products.

^e For the product as a whole.

^f In the last phase of the development of the test procedure, modifications of the smoke measurement system have been introduced, the effect of which needs further investigation. This may result in a modification of the limit values and/or parameters for the evaluation of the smoke production.

s1 = SMOGRA $\leq 30 \text{ m}^2/\text{s}^2$ and TSP_{600s} $\leq 50 \text{ m}^2$; s2 = SMOGRA $\leq 180 \text{ m}^2/\text{s}^2$ and TSP_{600s} $\leq 200 \text{ m}^2$; s3 = not s1 or s2

^g d0 = No flaming droplets/ particles in EN 13823 within 600 s;
d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;
d2 = not d0 or d1.

Ignition of the paper in EN ISO 11925-2 results in a d2 classification.

^h Pass = no ignition of the paper (no classification);
Fail = ignition of the paper (d2 classification).

ⁱ Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

***** To be continued*****

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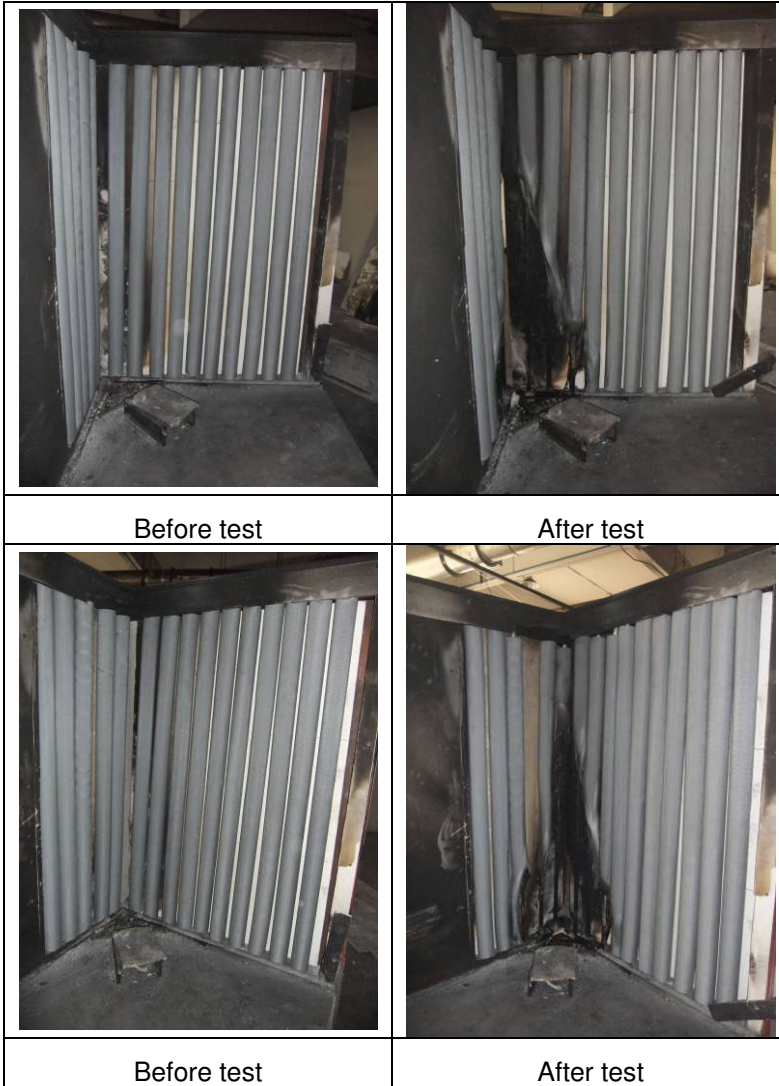
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Sample Photo:



- The test was performed by SGS internal laboratory.

***** End of report *****

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